IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: Richard Baker et al.	Art Unit	: 1782
Serial No.	: 10/761,008	Examiner	: Steven N. Leff
Filed	: January 20, 2004	Conf. No.	: 9638
Title	: Printing on Edible Substrates		

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Commissioner for Patents
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BRIEF ON APPEAL

Notice of Appeal filed June 6, 2011

(1) Real Party in Interest

The real party in interest is FUJIFILM Dimatix, a Delaware corporation, having a place of business at 2250 Martin Avenue, Santa Clara, CA 95050.

(2) Related Appeals and Interferences

None.

(3) Status of Claims

All claims (1-11, 13-29, and 37-46) have been rejected and are being appealed. Claims 12, and 30-36 are canceled.

(4) Status of Amendments

No amendment was filed after the last rejection.

(5) Summary of Claimed Subject Matter

The claimed subject matter relates to printing on food ("ejecting a jettable media onto a surface of a food product" in the words of some of the claims). The food product can be, for example, stable, flowable foods (e.g., ice cream slurry). The claimed subject matter includes reducing the flowability of the food after printing.

For example, consider a production line for filling and packaging cartons of ice cream. Multiple, empty cartons travel down a conveyor and pass underneath a dispenser that fills the cartons with ice cream slurry. The slurry is in a stable state, but not yet frozen. The filled cartons travel along the conveyor to a packaging station, where the cartons are sealed for distribution. Then the sealed cartons move through a flash freezer, which turns the slurry into frozen ice cream. (specification at p. 4, lines 14-26)

In this example, because the slurry is packaged and sealed before it is frozen, an ice cream manufacturer that wants to print on the ice cream after it has been frozen could open the sealed cartons, print on the frozen ice cream, and then re-seal the cartons. Or, it could rearrange the order of its production line so that the ice cream is frozen before the cartons are sealed. With

this rearrangement, the flash freezer would be upstream of the packaging station. That way the frozen ice cream would be ready for printing before the carton is sealed.

The applicant's claimed subject matter takes a different approach that would, in this example, include printing on the ice cream in its flowable yet stable state (i.e., a slurry state) before it is packaged and frozen. In this arrangement, the cartons would no longer need to be opened and re-sealed. And the ice cream manufacturer does not have to rearrange its production line. Instead, it can add a printing station to the existing production line between the dispensing station and the packaging station, and upstream of the flash freezer. (Id., p. 4, lines 22-25) Freezing the slurry after printing also reduces diffusion of the media (e.g., the ink) in the food product. (Id., p. 4, lines 25-26) In addition, by printing on a stable, flowable food product, the image does not substantially modify the viscosity of the food product and thus does not substantially alter the food's textural characteristics. (Id.,p. 3, lines 15-16)

In this way, the ice cream manufacturer can offer decorative ice cream without having to add the steps of opening and re-sealing the cartons and without having to rearrange his existing production line.

These features and others are recited in the applicant's independent claims 1 and 27, which share in common:

(1) ejecting a jettable media onto a surface of a food product from an ink jet printer as a series of fluid drops in a predetermined pattern on the surface, (Id.,p. 1, lines 30-31),

(2) the food product that bears the surface both (a) is in a stable state such that the predetermined pattern on the surface will be maintained for a period of at least 10 minutes, and (b) has a gravity flowability of 50% or more in 24 hours or less, (Id.,p. 6, lines 1-11, and lines 20-27),

(3) after ejecting the media, reducing diffusion of the jettable media in the food product (Id.,p. 4, lines 25-26) and,

(4) reducing the flowability of the food product (Id., p. 4, lines 18-28).

In addition to the features that they share in common, independent claim 27 and dependent claims 2-11, 13-26, 28, 29, 37-46 also recite features that differ.

In claim 27, the process also includes that the media on the food product has a lateral image bleed of about 10% or less in 30 minutes. (Id.,p. 2, lines 8-9)

In claim 2, the media of claim 1 has a viscosity greater than a viscosity of the food product at a temperature of the food product during application of the media. (Id.,p. 2, lines 24-26)

In claim 3, reducing diffusion of the jettable media of claim 1 includes cooling the food product. (Id., p. 2, lines 16-18)

In claim 4, reducing diffusion of the jettable media of claim 1 includes cooling the food product to about 32°F or less. (Id.)

In claims 5 and 28, the process of claims 1 and 27 also includes, after ejecting the media, enclosing the food product in a container. (Id., p. 2, lines 18-19)

In claim 6, the process of claim 1also includes, before ejecting the media, the food product having a viscosity of about 50,000 cps or less. (Id., p. 2, lines 19-20)

In claim 7, the food product of claim 1 has a viscosity of about 50 to 110 cps before ejecting the media and the drop volume is about 120 pL or less. (Id., p. 2, lines 20-21)

In claim 8, the ink jet printer of claim 1 comprises a drop on demand ink jet printer. (Id., p. 2, lines 21-22)

In claim 9, the ink jet printer of claim 8 comprises a piezoelectric ink jet printer. (Id., p. 2, line 22)

In claim 10, the process of claim 1 also includes heating the media to a temperature of about 40 to 140°C. (Id., p. 2, lines 22-23)

In claim 11, the process of claim 1also includes printing at a resolution of 50 dpi or more. (Id., p. 2, lines 23-24)

In claim 13, the media of claim 1 has a viscosity of about 8-20 cps when the media is ejected from the ink jet printer. (Id., p. 2, lines 27-28)

In claim 14, the media of claim 1 has a viscosity of about 70-100 cps at 68 degrees F. (Id., p. 2, lines 28-29)

In claim 15, the media of claim 1 has a water soluble carrier. (Id., p. 2, line 29)

In claim 16, the media of claim 1 comprises predominantly an alcohol or acid, or water or combination thereof. (Id., p. 2, lines 29-30)

In claim 17, the media of claim 1 comprises predominantly a fat or a wax and is a solid at 68 degrees F. (Id.,p. 11, lines 25-26)

In claim 18, the media of claim 1 is insoluble in the food product. (Id.,p. 3, lines 1-2)

In claim 19, the media of claim 1 includes a visible dye. (Id., p. 3, line 2)

In claim 20, the media of claim 1 includes a flavor additive. (Id., p. 3, line 3)

In claim 21, the food product of claim 1 comprises a dairy product. (Id.)

In claim 22, the food product of claim 21 comprises ice cream or yogurt. (Id., p. 3, lines 3-4)

In claim 23, the food product of claim 1 comprises a coffee drink including a dairy product. (Id., p. 3, line 4)

In claim 24, the food product of claim 1 is in a temperature range of about 40 to 120°F while ejecting the media. (Id., p. 6, lines 30-31)

In claim 25, the process of claim 1 also includes serving said food product to a consumer within about 45 minutes of ejecting said media. (Id.,p. 3, line 6)

In claim 26, the media on the food product of claim 1 has a lateral image bleed of about 10% or less after 10 minutes. (Id., p. 3, lines 6-8)

In claim 29, the process of claim 27 also includes enclosing the food product in a container prior to reducing diffusion of the jettable media. (Id., p. 2, lines 16-19)

In claims 37 and 39, the process of claims 1 and 27 also includes providing an ink jet printer capable of ejecting the series of fluid drops. (Id.,p. 1, lines 30-31)

In claims 38, the fluid drops of claim 1 have a drop volume of about 200 pL or less. (Id., p. 2, line 3)

In claim 40, the drops of claim 27 have a volume of about 200 pL or less. (Id.)

In claim 41, providing the food product of claim 1 in a flowing state includes dispensing the food product from a dispenser into a container. (Id.,p. 4, lines 3-4)

In claim 42, the process of claim 41 also includes, after dispensing the food product into the container, transporting the container on a conveyor to a printing station. (Id., p. 4, lines 6-7)

In claim 43, the process of claim 42 also includes, at the printing station, ejecting the jettable media on the surface of the food product. (Id., p. 4, lines 7-9)

In claim 44, the process of claim 1 also includes, after ejecting the media, transporting the food product in a container to a packaging station to seal the container. (Id.,p. 4, line 16-19)

In claim 45, the process of claim 1 also includes, after ejecting the media, transporting the food product in a container to a post-processing station to reduce diffusion of the jettable media in the food product. (Id., p. 4, lines 20-26)

In claim 46, the post-processing station of claim 45 comprises a freezer. (Id., p. 4, lines 21-22)

(6) Grounds of Rejection to be Reviewed on Appeal

1. The rejection of each of the claims 14 and 17 as failing to comply with the written description requirement.

2. The rejection of each of the claims 1-11, 13-29 and 37-46 as being indefinite for failing to particularly point out and distinctly claim the subject matter.

3. The rejection of each of the independent claims 1 and 27 as having been obvious from what was described in Shastry (WO 2004/003089) in view of Soehnlen (U.S. Pat. 6,355,290).

4. The rejection of each of the dependent claims as having been obvious based on Shastry in view of http://pumplocker.com/images/lit/WEI1/FLUX-HIGH-VISCOSITY-B0000-VISC-CHART-1.PDF ("pumplocker.com") and/or Soehnlen.

(7) Argument

1. The rejection of claims 14 and 17 as failing to comply with the written description requirement was improper because 68 degrees F is supported by the specification.

Claims 14 and 17 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Claim 14 recites that the media of claim 1 has a viscosity of about 70-100 cps at "*68 degrees F*" (emphasis added). Claim 17 recites that the media of claim 1 comprises predominantly a fat or a wax and is a solid at "*68 degrees F*". (emphasis added) The examiner contends that, "the [applicant's] specification is silent to teaching a media viscosity at a specific temperature of 68F." (Office Action (OA) of 3/3/2011, p. 2) The applicant disagrees because the term "room temperature" is provided in the applicant's

specification (e.g.p. 6, line 30 – p. 7, line 1) and a person of skill in the art would understand 68 degrees F to represent room temperature.

The history of the prosecution of these claims is instructive. Before claims 14 and 17 were rejected under §112, *first* paragraph, they were rejected under §112, *second* paragraph, as being indefinite. (OA of 12/18/2008, p. 3) Claim 14, as initially filed, recited that the media of claim 1 had a viscosity of about 70-100 cps at *room temperature*. Claim 17 recited that the media of claim 1 comprises predominantly a fat or a wax and is a solid at *room temperature*.

In the examiner's words in that office action, "[t]he term 'room temperature' is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear as to what is encompassed by the phrase 'at room temperature'; it is unclear as to what degree of difference is encompassed by this phrase, since a walk-in freezer would have one room temperature which is different from the room temperature of a heated environment." (Id.)

In response, the applicant provided a Wikipedia definition for the term "room temperature." (Reply of 5/18/2009, p. 7-8) Wikipedia states that "room temperature (also referred to as ambient temperature) is a common term to denote a certain temperature within an enclosed space at which humans are accustomed. Room temperature is thus often indicated by general human comfort, with the common range of 7°C (44°F) to 32°C (90°F), though climate may acclimatize people to higher or lower temperatures. The term can also refer to a temperature of food to be consumed, which is placed in such a room for a given time." (Id.)

The examiner rejected this definition and repeated his previous rejection. (OA of 9/22/2009, p. 10) He further stated that "[w]ith respect to applicant's wikipedia definition of 'room temperature' it is noted that the definition is specific to a range for humans, where the instant claims are not specific to common human room temperatures." (Id.)

The applicant responded that they "[could not] find any support for an ordinary meaning of 'room temperature' to include freezing temperatures within a walk-in freezer or elevated temperatures in a heated environment, as proposed by the examiner." (Reply of 12/11/2009, p. 8)

The examiner again repeated his rejection that the term "room temperature" was indefinite. (OA of 1/11/2010, p. 3) "The term 'at room temperature' is not defined by the claim,

the specification does not provide a standard for ascertaining the requisite degree ... since a walk-in freezer would have one temperature which is different from the room temperature of a heated environment." (Id.)

The applicant explained that a person of ordinary skill in the art would understand the scope of the term "room temperature," according to Wikipedia's definition. (Reply of 5/7/10, p. 8) But the examiner repeated his rejection. (OA of 7/20/2010, p. 2)

In a good faith attempt to resolve this issue, the applicant amended claims 14 and 17 by replacing the term "room temperature" with --68 degrees F--. (Reply of 1/11/11, p. 3)

The examiner now rejects claims 14 and 17 for a new reason, that is, for failing to comply with the written description requirement under 35 U.S.C. §112, first paragraph. (OA of 3/3/2011, p. 2) He alleges that, "the specification is silent to teaching a media viscosity at a specific temperature of 68F." The examiner states that the applicant's "pre-grant publication at par. 0007 teaches media viscosity of 70-100 cps at room temperature." (Id.) However, the examiner contends that "the teaching of media viscosity at a specific temperature of 68F. [sic] is not supported by applicants specification." (Id.) The examiner goes on to say that the applicant's "specification at par. 0023 defines 'room temperature' as a temperature 'above freezing' and more specifically a temperature range of 40-120F., and thus 'the media has a viscosity of about 70-100 cps at 68F.' is subject matter which was not originally described in the specification." (Id.)

The applicant notes that the examiner's new written description rejection contradicts his previous indefiniteness rejections. Previously, the examiner insisted that "[t]he term 'room temperature' is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention." (OA of 12/18/2008, p. 3). But now he states the opposite that the applicant's "specification at par. 0023 defines 'room temperature' as a temperature 'above freezing' and more specifically a temperature range of 40-120F." (OA of 3/3/2011, p.2)

In another inconsistency, the examiner previously argued that "room temperature" could include the temperature of a walk-in freezer (OA of 12/18/2008, p. 3), but now declares that the applicant's specification defines "room temperature" as a temperature above freezing. (OA of 3/3/2011, p. 2)

The examiner also has incorrectly paraphrased the applicant's specification. The examiner states that, "applicants pre-grant specification at par. 0023 defines 'room temperature' as a temperature 'above freezing' and more specifically a temperature range of 40-120F., and thus 'the media has a viscosity of about 70-100 cps at 68F.' is subject matter which was not originally described in the specification." But this is incorrect.

The examiner has misinterpreted what the specification said about "room temperature." The applicant's specification does not define room temperature as a temperature above freezing or a temperature range of 40-120°F. Rather, the specification states, "[f]or example, the product may be at a temperature above freezing, e.g. in a temperature range of about 40 to 120° F., *e.g. at room temperature*." (specification, p. 6, line 30 – p. 7, line 1, emphasis added) Room temperature is identified as a subset or an example of a temperature above freezing and a further subset of a temperature in the range of 40-120°F. But the specification does not define room temperature as any temperature above freezing (which could include temperatures much greater than room temperature) or any temperature in a temperature range of 40-120°F.

In summary, the examiner rejected the term "room temperature" as being indefinite but later said that the term is defined in the specification. He earlier argued that the term "room temperature" could include the temperature of a walk-in freezer but now declares that "room temperature" is a temperature above freezing.

The applicant has attempted to further prosecution by replacing the term "room temperature" with an actual temperature, i.e. 68 degrees F. The examiner has rejected this term as well, for a new reason, i.e., failing to meet the written description requirement. The applicant disagrees with this rejection as well. The specification discloses the term "room temperature" (e.g. p. 2, lines 28-29) and a person of skill in the art would understand 68 degrees F to be supported by the phrase "room temperature."

Any doubt that 68 degrees is often understood as a proxy for room temperature is dispelled by a quick Google search that reveals many explicit instances of that correspondence.

The applicant has made a good faith effort to respond to the examiner's rejections, despite their inconsistencies, using language supported by the specification.

The applicant asks the Board to overturn the examiner's rejection and find that claims 14 and 17 meet the written description requirement of 35 U.S.C. §112, first paragraph.

2. The rejection of claims 1-11, 13-29, and 37-46, as being indefinite for failing to particularly point out and distinctly claim the subject matter, was improper.

The examiner rejected claims 1-11, 13-29 and 37-46 under 35 U.S.C. §112, second paragraph.

a. The rejection of independent claims 1 and 27 and their dependent claims, as being indefinite, was improper because the claims recite that the food product has a flowability *while* the media is being ejected.

The examiner states that:

> Claims 1 and 27 are rejected due to the phrase "while the food product that bears the surface both (a) is in a stable state such that the predetermined pattern on the surface will be maintained for a period of at least 10 minutes, and (b) has a gravity flowability of 50% or more in 24 hours or less" since it is unclear if these condition [sic] are relative to the substrate at the time of printing or with respect to desired substrates which are to be printed.

The applicant disagrees with the contention that this phrase is indefinite. Claim 1 recites, in clear terms, "ejecting a jettable media ... *while* the food product ... both (a) is in a stable state..., and (b) has a gravity flowability of 50% or more in 24 hours or less." (emphasis added) The claim makes it clear that the food product has features (a) and (b) *while* the media is being ejected.

As with the claim language related to room temperature discussed earlier, the applicant has repeatedly proposed changes to the claim language to encompass both the stable state of the food product as well as its flowability in a way that would satisfy the examiner. Claim 1, as initially written in the application, recited, "providing a consistency-maintaining food product having gravity flowability of about 50% or more in 24 hours." The examiner rejected this phrase under 35 U.S.C. §112, second paragraph as being indefinite. The examiner alleged that "it [was] unclear at what temperature the food product [was] stored during the 24 hour time period, i.e. room temperature, in a heated environment, or in a cooled or frozen environment." (OA of 7/26/2007, p. 2)

Although the applicant believed that this rejection was inappropriate, the applicant attempted to be responsive by deleting the phrase "in 24 hours." Amended claim 1 then recited,

"providing a consistency-maintaining food product having a gravity flowability." (Reply of 1/25/2008, p. 8) In addition, the applicant cited sections of the specification (e.g. p. 6, line 30 – p. 7, line 3) that supported this amendment and explained that the phrase was meant to be as broad as reasonably possible and include products at room temperature, in a heated environment, and in a cooled or frozen environment. (Id.)

The examiner seemed to accept this language because he did not reject this phrase as being indefinite in the next office action of 5/5/2008.

However, in a later office action of 12/18/2008, the examiner rejected the phrase "providing a consistency-maintaining food product having a gravity flowability," as being indefinite. The examiner contended that "it [was] unclear at what temperature the food product is being provided, i.e. room temperature, in a heated environment, or in a cooled or frozen environment as the environment directly affects whether the food product is provided is at a consistency-maintaining state which is capable of a gravity flowable state, in a gravity flowable state, or if the product to be delivered is in a consistency-maintaining state and has a gravity flowability at the time of printing." (OA of 12/18/2008)

Although the applicant considered this rejection, also, to be inappropriate, in response, the applicant attempted to cooperate by amending claim 1 to say that the jettable media was applied *while* the food product was in a flowable state and that the flowability or density was maintained consistently. Specifically, claim 1 recited, "applying a jettable media to the food product...*while* the food product is in the flowable state in which the flowability of the food product under the influence of gravity or the density of the food product is maintained consistently." (emphasis added)

In the next office action, the examiner rejected this amended phrase as being indefinite. (OA of 9/22/2009, p. 2) The examiner alleged that "it [was] unclear if the food product [was] actually in a state which requires a 'flowing property', such as melted chocolate, or if the food product is in a state which is capable of flowing, such as solid chocolate, and as such is capable of being 'flowable' under the influence of processing step such as heating." (Id.) In addition, with respect to the density limitation, the examiner contended that "it [was] unclear if the food product [had] one density, i.e. completely melted chocolate or solid chocolate, if 'a density' of the food product is with respect to a partially flowable state, i.e. a top melted layer, actually

"flowing property", such as melted chocolate or if the food product is in a state which is capable of flowing, such as solid chocolate, and as such is capable of being "flowable" under the influence of processing step such as heating. (OA of 9/22/2009, p. 2)

In response, the applicant explained that, "the claim language does not refer to 'a food product that is capable of flowing', but recites that the food product is '*in* a flowable state.'" (emphasis added; Reply of 12/11/2009, p. 7) The applicant provided examples of food products in a flowable state, such as a liquid or slurry. (Id.)

With respect to the density limitation, it seemed as if the examiner had confused this limitation with the limitation about "the flowability of the food product under the influence of gravity." Claim 1 provided these limitations in the alternative. That is, the food product must have either a "flowability…[that] is maintained consistently," *or* "[a] density…[that] is maintained consistently." In the reply, the applicant explained that "[the density] limitation is distinct from the limitations that the food product is in the flowable state and that the flowability under an influence of gravity be maintained consistently. (Of course, the flowability and density limitations are not mutually exclusive; they can both be met and still fall within the scope of the claims.)" In fact, "[t]he entire food could have one density, for example, or the food product could be in a state that is capable of flowing and still meet the *density* limitation." (emphasis added; reply of 12/11/2009, p. 7-8) In other words, even though a food product that is *capable* of flowing may not meet the limitation that "the food product is *in* a flowable state" or that "the flowability…is maintained consistently," it can still meet the *density* limitation.

In the subsequent office action, the examiner repeated his rejection that "the phrase 'providing a food product in a flowable state in which a flowability of the food product under an influence of gravity or a density of the food product is maintained consistently' is rejected as it is unclear if the food product is actually in a state which requires a 'flowing property', such as melted chocolate, or if the food product is in a state which is capable of flowing, such as solid chocolate, and as such is capable of being 'flowable' under the influence of processing step such as heating." (OA of 1/11/2010, p. 2) In the Response to Argument section, the examiner urged the applicant to consider p. 9 of the applicant's reply of 12/11/2009, which he alleges "states that 'the food product could be in a state that is capable of flowing' and still meet the limitation, thus

it remains unclear if the food product is actually in a state which requires a 'flowing property'..." (OA of 1/11/2010, p. 9)

However, the applicant respectfully believes that the examiner had misinterpreted the applicant's explanation. The applicant said that the food product could be in a state that is capable of flowing and still meet the *density* limitation. Contrary to the examiner's allegation, the applicant did not say that the food product could be in a state that is capable of flowing and still meet the *claim* limitation (unless it was in the flowable state, of course). To meet the claim limitation as to the food product, the food product must be in a flowable state and either the flowability or the density must be maintained consistently.

Nevertheless, in a cooperative effort to advance the prosecution, the applicant once again amended the claim by replacing "flowable state" with --flowing state-- and replacing "the flowability of the food product under the influence of gravity or a density of the food product is maintained consistently" with --a food product that has a stable consistency--. (Reply of 5/7/2010, p. 7) Claim 1 now recited "providing a food product that has a stable consistency and is in a flowing state."

The examiner rejected this claim language as being indefinite. Specifically, the examiner said that this phrase was rejected because "it [was] unclear if the food product has a stable consistency with respect to the consistency throughout being the same, i.e. pudding prior to printing, if the phrase is with respect to the food product which has a stable consistency with respect to the consistency throughout being the same after printing as a result of reducing flowing, if the phrase is with respect to the consistency throughout being the same after printing as a result of reducing flowing, if the phrase is with respect to the consistency being stable as a result of a single material, i.e. no inclusions such as nuts, chips, or if the phrase is with respect to a food product which regardless of processing parameters, maintains or only has a single or 'stable consistency'." (OA of 7/20/2010, p. 2)

Yet again, the applicant sought to address the examiner's concerns, even though the applicant questioned their appropriateness, and amended claim 1 to say "ejecting...media...*while* the food product...both (a) is *in* a stable state..., and (b) *has* a gravity flowability." (emphasis added) Similar amendments were made to claim 27. Thus, claims 1 and 27 specify that the food product has both features (a) and (b) and has them *while* the media is being ejected.

For at least these reasons, the applicant asks the Board to overturn the examiner's rejection and find that claims 1 and 27 along with their dependent claims 2-11, 28, 29, and 37-46 are definite under 35 U.S.C. §112, second paragraph.

b. The rejection of claim 7, as being indefinite, was improper because a person of ordinary skill in the art would understand "the drop volume" to refer to the volume of an individual drop.

The examiner rejected the phrase "the drop volume" under 35 U.S.C. §112, second paragraph. (OA of 3/3/2011, p. 3-4) He contends that claim 7 lacks antecedent basis and thus it is unclear if the drop volume is with respect to the volume of each individual fluid drop, with respect to the total volume of the series of jettable media, with respect to the total volume of media needed prior to ejecting, or something different altogether. (Id.) The phrase "the drop volume" is singular and refers to the volume of an individual fluid drop. A person of ordinary skill in the art would understand that the term "the drop volume" describes the volume of a single drop.

3. The rejection of the independent claims 1 and 27 as having been obvious in light of Shastry in view of Soehnlen was improper because the examiner misconstrued the claims and misinterpreted the references.

Claim 1

The examiner rejected claim 1 under 35 U.S.C. §103(a) as being unpatentable over Shastry (WO 2004/003089) in view of Soehnlen (U.S. Pat. 6,355,290). Some of the features are alleged by the examiner to be directly described in Shasty. Specifically, in the examiner's words, "ejecting a jettable media (par. 0018) on a surface of a food product from an ink jet printer as a series of fluid drops in a predetermined pattern on the surface (par. 0017) while the food product that bears the surface both (a) is in a stable state ... (par. 31)", and "the surface also has (b) a gravity flowability of 50% or more in 24 hours or less". (OA of 3/3/2011, p. 4-5) The examiner acknowledges that the feature, "after ejecting the media, reducing diffusion of the jettable media in the food product and reducing the flowability of the food product," is not disclosed by Shastry, but contends that the feature would have been obvious from the combination of Shastry and Soehnlen. (Id., p. 6-7)

The examiner's rejection should be overturned for several reasons.

First, with respect to feature (a), the examiner has provided his own definition of the term "stable state" rather than using the language in the claim. Second, the examiner has interpreted features (a) and (b) independently rather than identifying a food product that embodies both features (a) *and* (b). Third, the examiner has failed to show a *prima facie* case of obviousness because the combination of Shastry and Soehnlen did not disclose or make obvious the claim limitation of "after ejecting the media, reducing diffusion of the jettable media in the food product and reducing the flowability of the food product."

First, claim 1 recites that the food product "(a) is in a stable state *such that the predetermined pattern on the surface will be maintained for a period of at least 10 minutes*." (emphasis added) The examiner asserts that Shastry discloses this feature according to the examiner's definition of "stable state."

Specifically, the examiner states that the food product "(a) is in a stable state in one instance with respect to defined surfaces such as *hydrophobic surfaces or non porous surfaces* (par. 0031) or with respect to broadly *any material capable of accepting a pattern at the time of printing* or in the instance with respect to being in a stable states [sic] since *the substrate is not moving relative to the print head at the time of ink ejection* (par. 0017) for producing images of high resolution (par. 0054)." (Id., p. 4-5)

In this respect, however, claim 1 does not mention anything about hydrophobic surfaces or non-porous surfaces. Nor does it mention that the food product can be any material capable of accepting a pattern at the time of printing. Nor does claim 1 recite that being in a stable *state* means that the substrate is or is not moving relative to the print head at the time of ink ejection. Rather, claim 1 *does* say that in a stable state means "that the predetermined pattern on the surface [of the food product] will be maintained for a period of at least 10 minutes."

The examiner has not shown where this feature of the stable state, the one that is recited in claim 1, was disclosed or made obvious by Shastry. It is not logically required that because a food product has a hydrophobic surface, is made of any material capable of accepting a pattern, or is not moving relative to the print head, that this food product is (or is not) in a stable state such that the predetermined pattern on the surface will be maintained for a period of at least 10 minutes.

Second, claim 1 recites that the food product has two features. That is, the food product "(a) is in a stable state such that the predetermined pattern on the surface will be maintained for a period of at least 10 minutes, *and* (b) has a gravity flowability of 50% or more in 24 hours or less." (emphasis added) The claim does not say that the food product has (a) *or* (b). Thus, the examiner cannot properly reject the claim by merely providing a list of food products that meet feature (a) and then a separate list that meet feature (b). Yet, this is what the examiner has done. With reference to feature (a), the examiner points to hydrophobic surfaces, non-porous surfaces, any material capable of accepting a pattern at the time of printing, or a substrate that is not moving relative to the print head at the time of ink ejection. (Id., p. 4-5) And for feature (b), he points to pudding and melting ice cream. (Id., p. 5) However, claim 1 requires that the *same* food product include both features: (a) is in a stable state such that the predetermined pattern on the surface will be maintained for a period of at least 10 minutes, *and* (b) has a gravity flowability of 50% or more in 24 hours or less." (emphasis added) The examiner has not cited any food product in the prior art that has both of these two features.

For example, melting ice cream does not embody features (a) and (b). While melting ice cream may have a gravity flowability of 50% or more in 24 hours or less, melting ice cream is not a food product that is in a stable state *such that the predetermined pattern on the surface will be maintained for a period of at least 10 minutes*. Quite the opposite, if a pattern is printed on melting ice cream, the pattern will shift as the top surface melts into a liquid and moves across the underlying surface that is still frozen. Ice cream slurry, on the other hand, an example described in the applicant's specification (para. 16-17), would be a food product that "(a) is in a stable state such that the predetermined pattern on the surface will be maintained for a period of at least 10 minutes, and (b) has a gravity flowability of 50% or more in 24 hours or less." Like melting ice cream, ice cream slurry also has a gravity flowability of 50% or more in 24 hours or less. But unlike melting ice cream, ice cream slurry is in a stable state and can maintain a predetermined pattern for at least 10 minutes. The slurry does not shift and move around as melting ice cream would.

Third, the examiner has failed to meet his burden of providing a *prima facie* case of obviousness because he has not shown that the limitation "after ejecting the media, reducing diffusion of the jettable media in the food product and reducing the flowability of the food

product" was anticipated by or made obvious by the prior art. The examiner acknowledges that Shastry is silent with respect to this feature. (Id., p. 6)

The examiner instead alleges that the combination of Shasty and Soehnlen would have made this feature obvious. Specifically, the examiner states that "Soehnlen et al. teach an ice cream manufacturing and packaging process (abstract). More specifically Soehnlen et al. teach the commercial making of ice cream starts with conventionally, liquid ingredients, including dairy products, placed in a mix tank 10 and blended (col. 11 lines 31-40) … . Soehnlen et al. continued by transporting the food product in the container to a post-processing station to reduce diffusion of the media in the product which is a flash freeze [sic] (col. 14 lines 18-28)." (Id.)

As the examiner contended: "Thus since Shastry et al. teach printing on ice cream and more specifically since Shastry et al. '3089 teach pudding, and cream which are flowing products which require packaging and ice cream where if not kept at 32F ice cream will melt in addition to teaching the advantage obtained due to wax-based inks which solidify on contact (par. 0056). One of ordinary skill in the art at the time of invention by applicant would have been motivated to combine the teachings [of Shastry and Soehnlen] thus further provide the advantage of maintaining the resolution of the image since the melting ice cream, would cause the ink to 'run' or 'bleed' and since 'reducing the flowability of the food product' with respect to the ice cream as taught by Shastry et al. flows logically for its art recognized purpose of keeping the ice cream from melting…" (Id., p. 6-7)

The applicant does not dispute that Soehnlen described an ice cream manufacturing process. But the applicant does dispute the examiner's statement that "Soehnlen et al. continue by transporting the food product in the container to a post-processing station to reduce diffusion of the media in the product which is a flash freeze [sic](col. 14 lines 18-28)." Soehnlen made no mention of reducing diffusion of the media in the food product.

The examiner's reliance on melting ice cream as a reason for combining Shastry and Soehnlen was misplaced. The food product recited in claim 1 excludes unstable foods, such as melting ice cream, as explained above. And Shastry never mentioned melting ice cream or printing on melting ice cream.

As acknowledged by the examiner, Shastry was silent about reducing diffusion of the jettable media … and reducing the flowability of the food product. The only reasonable

inference that can be drawn from Shastry is that the foods were printed on in their final state, e.g. frozen. That is, there were no changes to the state of the foods after they were printed on. Soehnlen did not make up for this deficiency. Soehnlen only added that ice cream can be frozen. But still, there was no mention of when the ice cream was put into a frozen state in relation to when the ice cream was printed on.

The combination of Shastry and Soehnlen might suggest why a person of ordinary skill in the art would have printed on ice cream *after* it is frozen, for example, by Soehnlen's flash freezer. But the combination of Shastry and Soehnlen would not have made obvious to a person of ordinary skill to eject media on slurry *before* it reaches a flash freezer. Thus, the combination of Shastry and Soehnlen lacked the teaching of the timing between "ejecting a jettable media onto a surface of a food product" and "reducing diffusion of the jettable media and reducing the flowability of the food product" as recited in claim 1.

Accordingly, the combination would not have made obvious "after ejecting the media, reducing diffusion of the jettable media in the food product and reducing the flowability of the food product," as recited in claim 1.

For at least these reasons, claim 1 should be found patentable over Shastry in view of Soehnlen.

Claim 27

The examiner rejected claim 27 under 35 U.S.C. §103(a) as being unpatentable over Shastry (WO 2004/003089) in view of Soehnlen (U.S. Pat. 6,355,290). The examiner's rejection should be overturned for at least similar reasons as those given for claim 1 and separately for a different reason.

Claim 27 is patentable over Shastry in view of Soehnlen also because claim 27 recites "the media on the food product having a lateral image bleed of about 10% or less in 30 minutes." The examiner contends that Shastry disclosed this feature. (OA of 3/3/2011, p. 7) Specifically, the examiner argued that, "since the degree that an image bleeds is dependant upon different factors, such as the surface characteristics and since Shastry et al. teach achieving applicants desired resolution on ice cream. It would have further been obvious to one of ordinary skill in the art at the time of the invention by the applicant to reduce the flowability of the ice cream, and more specifically freezing the ice cream such that an image bleed of 10% or less in 30 minutes,

thus maintaining the desired high resolution image as taught by Shastry et al. by precluding melting." (Id.)

The image resolution of greater than 100 dpi described in Shastry refers to the resolution on confectionery products, such as M&M's® hard-shelled candies. (Shastry, para. 54) It is not clear from Shastry what the image resolution would be on frozen ice cream, let alone, melting ice cream. In fact, Shastry never mentioned *melting* ice cream. The only reasonable inference is that Shastry printed on *frozen* ice cream. Shastry did not provide any motivation to wait for the ice cream to melt, print on the melted ice cream, and then re-freeze it. Nevertheless, the examiner applies Shastry's teaching about image resolution on confectionery products to *melting* ice cream.

Even if the image resolution was the same on confectionery product as on melting ice cream, Shastry was silent about the lateral bleed of the image in a given period of time. It was unstated (and perhaps unknown) what the lateral image bleed would be on *melting* ice cream or how re-freezing it might affect the amount of lateral image bleed.

Furthermore, as explained with reference to claim 1, claim 27 does not relate to melting ice cream. Thus, the examiner's inferences about printing on melting ice cream or the image resolution on melting ice cream, are not relevant.

Thus, neither Shastry nor Soehnlen disclosed or made obvious that "the media on the food product [has] a lateral image bleed of about 10% or less in 30 minutes," as recited by claim 27.

For at least these reasons and the reasons related to claim 1, claim 27 should be found patentable over Shastry in view of Soehnlen.

Claim 2

Claim 2 recites that the media of claim 1 has a viscosity greater than a viscosity of the food product at a temperature of the food product during application of the media. The examiner rejected this claim as being unpatentable over Shastry in view of Soehnlen. For at least reasons similar to those discussed above with respect to claim 1, the cited references neither disclosed nor would have made obvious the subject matter of claim 2.

In addition, claim 2 is patentable for its own reasons, in particular that the feature of claim 2 was not disclosed by the cited references. Higher viscosity means that the material is "thicker" (e.g., like honey) while lower viscosity means that the material is "thinner" (e.g., like water). In rough terms, that is, the media is "thicker" than the food product. The examiner cites paragraph 31 of Shastry as having disclosed this feature. (OA of 3/3/2011, p. 5) But paragraph 31 described printing on hydrophobic or non-porous substrates (which sounds like solid substrates) using a wax base material that undergoes a phase change from a liquid state to a solid state upon contacting the substrate surface. Nothing was said about the viscosity of the hydrophobic or non-porous substrates or how the viscosity of these substrates compared to the viscosity of the wax based material. Assuming that the hydrophobic substrates were solid, then the wax based material (that is in a liquid state during ejection) would have a viscosity *lower* than a viscosity of the food product. But claim 2 says that the media has a viscosity *greater* than a viscosity of the food product.

Neither did Soehnlen disclose or make obvious this feature.

Thus, claim 2 is patentable over Shastry in view of Soehnlen for reasons other than its dependency on claim 1.

Claims 3 and 4

Claim 3 recites that reducing diffusion of the jettable media of claim 1 includes cooling the food product. Claim 4 adds cooling the food product of claim 3 to about 32°F or less. The examiner rejected this claim as being unpatentable over Shastry in view of Soehnlen. For at least reasons similar to those discussed above with respect to claim 1, the cited references neither disclose nor would have made obvious the subject matter of claims 3 and 4.

In addition, the examiner acknowledges that Shastry failed to disclose these features but cites Soehnlen as having disclosed these features. (OA of 3/3/2011, p. 6) As explained earlier, Soehnlen described an ice cream manufacturing and packaging process. Thus, the examiner hypothesizes that since Shastry taught printing on ice cream and ice cream melts at room temperature, then a person of ordinary skill in the art would have been motivated to combine Shastry with Soehnlen, which taught freezing ice cream. (Id.) However, claims 3 and 4 do not

relate to printing on melting ice cream. Thus, this combination still does not result in cooling a food product (let alone, cooling to about 32°F or less) to reduce diffusion of the jettable media in a food product, in which the food product is in a stable state such that the predetermined pattern on the surface will be maintain for a period of at least 10 minutes, and has a gravity flowability of 50% or more in 24 hours or less.

Thus, claims 3 and 4 are patentable over Shastry in view of Soehnlen for their own reasons.

Claims 5, 28, and 29

Claims 5 and 28 recite that after ejecting the media of claims 1 and 27, respectively, the food product is enclosed in a container. Claim 29 further recites enclosing the food product of claim 28 in a container prior to reducing diffusion of the jettable media. The examiner rejected these claims as being unpatentable over Shastry in view of Soehnlen. For at least reasons similar to those discussed above with respect to claims 1 and 27, the cited references neither disclosed nor would have made obvious the subject matter of claims 5, 28, and 29.

In addition, the examiner acknowledges that Shastry failed to disclose the features of claims 5, 28, and 29, and cites Soehnlen as disclosing these features. (OA of 3/3/2011, p. 6) But like Shastry, Soehnlen also failed to disclose these features. Soehnlen did describe packaging ice cream, but was silent about the timing between enclosing the ice cream and ejecting media on the food product. Likewise, Soehnlen was silent about the timing between enclosing the ice cream and reducing diffusion of the jettable media. Soehnlen did not even mention ejecting media, let alone, *after* ejecting media, enclosing the food product. Similarly, Soehnlen did not mention reducing diffusion of the jettable media, let alone, enclosing the food product *prior* to reducing diffusion of the jettable media. A combination of Shastry and Soehnlen would not have made obvious the timing between enclosing the food product in a container and ejecting the media or reducing diffusion of the jettable media.

Thus, claims 5, 28, and 29 are patentable over Shastry in view of Soehnlen for reasons other than their dependency on claims 1 and 27.

Claim 14

Claim 14 recites the media of claim 1 has a viscosity of about 70-100 cps at 68 degrees F. The examiner rejected this claim as being unpatentable over Shastry in view of Soehnlen. For at least reasons similar to those discussed above with respect to claim 1, the cited references neither disclosed nor would have made obvious the subject matter of claim 14.

In addition, the examiner acknowledges that "Shastry et al. is silent to the viscosity of the media being 70-100 cps at 68 F," but still insists that "Shastry et al. *does* teach applicants [sic] claimed media." (OA of 3/13/2011, p. 9; emphasis added) Without reconciling these two conflicting statements, it is unclear how Shastry can be silent to the viscosity of the media being about 70-100 cps at 69 degrees F, yet still teach the applicant's claimed media.

Thus, claim 14 is patentable over Shastry in view of Soehnlen for reasons other than its dependency on claim 1.

Claims 7, 11, 38, and 40

Claim 7 recites that the food product of claim 1 has a viscosity of about 50 to 110 cps before ejecting the media and the drop volume is about 120 pL or less. Claim 11 recites printing at a resolution of 50 dpi or more. Claim 38 recites that the fluid drops of claim 1 have a drop volume of about 200 pL or less. Claim 40 recites that the drops of claim 27 have a volume of about 200 pL or less.

The examiner rejected these claims as being unpatentable over Shastry in view of Soehnlen. For at least reasons similar to those discussed above with respect to claims 1 and 27, the cited references neither disclose nor would have made obvious the subject matter of claims 7, 11, 38, and 40.

In addition, contrary to the examiner's assertion, Shastry did not make obvious that the drop volume was about 200 pL or less or 120 pL or less (claims 7, 38, and 40) or a resolution of 50 dpi or more (claim 11). With respect to claim 11, the examiner cited the image resolutions described in paragraph 54 of Shastry. (OA of 3/3/2011, p. 8) However, these image resolutions relate to images printed on M&M's® Milk Chocolate and Peanut Chocolate Candies, which are hard surfaces. (Shastry, para. 54) The image resolution for hard surfaces did not necessarily

translate to the image resolution for food products having a gravity flowability of 50% or more in 24 hours or less.

With respect to claims 7, 38, and 40, the examiner acknowledges that Shastry did not teach a specific drop volume of 200 pL or less or 120 pL or less. (Id.) The examiner instead alleges that "[i]t would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to teach a specific drop volume of 200pL or 120pL or less since these properties which affect the desired image resolution, thus teaching a desired drop size which would provide the desired resolution of at least 50 drops per inch (dpi) which is positively taught by Shastry et al. where Shastry et al. teach resolution of up to 300 dpi., (par. 0054)." (Id., p. 8-9)

Yet the image resolution provided in paragraph 54 of Shastry related to confectionery products, like M&M's® hard-shelled candies, not to food products having a gravity flowability of 50% or more in 24 hours or less.

Neither did Soehnlen disclose or make obvious the features lacking in Shastry.

Accordingly, claims 7, 11, 38, and 40 are patentable over Shastry in view of Soehnlen for reasons other than their dependency on claims 1 or 27.

Claim 18

Claim 18 recites that the media of claim 1 is insoluble in the food product. The examiner rejected this claim as being unpatentable over Shastry in view of Soehnlen. For at least reasons similar to those discussed above with respect to claim 1, the cited references neither disclose nor would have made obvious the subject matter of claim 18.

In addition, the feature of claim 18 is not disclosed by the cited references. The examiner cites paragraph 31 of Shastry as having disclosed this feature. (OA of 3/3/2011, p. 6) However, paragraph 31 described a wax base material that underwent a phase change from a liquid to a solid state upon contacting the substrate surface, but was silent about whether the media was soluble in the food product.

Neither did Soehnlen disclose or make obvious the feature lacking in Shastry.

Thus, claim 18 is patentable over Shastry in view of Soehnlen for reasons other than its dependency on claim 1.

Claim 25

Claim 25 recites serving said food product of claim 1 to a consumer within about 45 minutes of ejecting said media. The examiner rejected this claim as being unpatentable over Shastry in view of Soehnlen. For at least reasons similar to those discussed above with respect to claim 1, the cited references neither disclose nor would have made obvious the subject matter of claim 25.

In addition, the feature of claim 25 is not disclosed by the cited references. The examiner merely alleges that "since Shastry et al. the provision of providing an image on almost any edible substrate, it would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to serve the food product to a consumer within 45 minutes of ejecting media, thus further enhancing the edibles overall appearance thereby further increasing sales." (OA of 3/3/2011, p. 10) While Shastry may describe printing on food and that printing can enhance the overall appearance of the food, this does not explain why a person of skill would be motivated to serve the food product within about 45 minutes of ejecting the media. To the contrary, Shastry described printing on M&M's® candies, and the applicant believes that it usually takes longer than 45 minutes to package and distribute M&M's® candies before they are served to a customer.

Neither did Soehnlen disclose or make obvious the feature lacking in Shastry.

Thus, claim 25 is patentable over Shastry in view of Soehnlen for reasons other than its dependency on claim 1.

Claim 26

Claim 26 recites that the media on the food product in claim 1 has a lateral image bleed of about 10% or less after 10 minutes. For at least reasons similar to those discussed above with respect to claim 1, the cited references neither disclose nor would have made obvious the subject matter of claim 26.

In addition, the examiner did not address this claim in the recent office action. Nevertheless, neither Shastry nor Soehnlen disclosed or made obvious the feature of claim 26. With respect to claim 27, which recites that the media on the food product [has] a lateral image bleed of about 10% or less in 30 minutes, the examiner cited a desired resolution of Shastry as disclosing this feature. (OA of 3/3/2011, p. 7) It is not clear what desired resolution the examiner is referring to, possibly the resolution mentioned in paragraph 54 of Shastry. Paragraph 54 described printing images on confectionery products having an image resolution of greater than 100 dpi. The examiner has extracted this image resolution and applied it to melting ice cream. But it was not clear from Shastry that the image resolution on confectionery products, such as M&M's® hard-shelled candies (Shastry, para. 54), can be applied to frozen ice cream, let alone, melting ice cream. Furthermore, even if the image resolution were the same, Shastry was silent about the lateral bleed of the image or the lateral bleed of the image in a given period of time. Thus, Shastry did not disclose and would not have made obvious that "the media on the food product has a lateral image bleed of about 10% or less in 10 minutes," as recited by claim 26.

Thus, claim 26 is patentable over Shastry in view of Soehnlen for reasons other than its dependency on claim 1.

Claims 42, 44, and 45

Claim 42 recites that after dispensing the food product of claim 41 into the container, transporting the container on a conveyor to a printing station. Claim 44 recites that after ejecting the media of claim 1, transporting the food product in a container to a packaging station to seal the container. Claim 45 recites that after ejecting the media of claim 1, transporting the food product in a container to a post-processing station to reduce diffusion of the jettable media in the food product. For at least reasons similar to those discussed above with respect to claim 1, the cited references neither disclose nor would have made obvious the subject matter of claims 42, 44, and 45.

In addition, the examiner acknowledges that Shastry failed to disclose the features of claims 42, 44, and 45, but cites Soehnlen as having disclosed these features. (OA of 3/3/2011, p.

6) But like Shastry, Soehnlen also failed to disclose these features. Soehnlen described packaging ice cream, but was silent about the timing between dispensing a food product into a container and transporting it on a conveyor to a printing station. Likewise, Soehnlen was silent about the timing between ejecting media and transporting a food product to a packaging station or to a post-processing station to reduce diffusion of the jettable media. Soehnlen did not even mention a printing station, let alone, transporting the container on a conveyor to a printing station *after* dispensing the food product into the container. Similarly, Soehnlen did not mention ejecting media, let alone, *after* ejecting media, transporting the food product in a container to a packaging station or to a post-processing station. A combination of Shastry and Soehnlen would not have made obvious the timing between these steps.

Furthermore, the examiner extrapolates from Shastry the idea of printing on melting ice cream, and uses this idea as a reason for combining Shastry and Soehnlen. But the food product of claims 42, 44, and 45 excludes unstable foods, such as melting ice cream. The applicant also notes that Shastry never mentioned melting ice cream or printing on melting ice cream.

Thus, claims 42, 44, and 45 are patentable over Shastry in view of Soehnlen for reasons other than their dependency on claim 1.

8. Conclusion

The examiner has failed to establish a *prima facie* case of obviousness for the reasons explained earlier.

The applicant asks the Board to overturn the rejections and allow the claims.

Please apply any necessary charges or credits to deposit account 06-1050.

Respectfully submitted,

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Appendix A - Claims

1. A process, comprising:

ejecting a jettable media onto a surface of a food product from an ink jet printer as a series of fluid drops in a predetermined pattern on the surface, while the food product that bears the surface both (a) is in a stable state such that the predetermined pattern on the surface will be maintained for a period of at least 10 minutes, and (b) has a gravity flowability of 50% or more in 24 hours or less, and

after ejecting the media, reducing diffusion of the jettable media in the food product and reducing the flowability of the food product.

2. The process of claim 1 wherein the media has a viscosity greater than a viscosity of the food product at a temperature of the food product during application of the media.

3. The process of claim 2 wherein reducing diffusion of the jettable media includes cooling the food product.

4. The process of claim 3 wherein reducing diffusion of the jettable media includes cooling the food product to about 32°F or less.

5. The process of claim 1 comprising, after ejecting the media, enclosing the food product in a container.

6. The process of claim 1 wherein before ejecting the media, the food product has a viscosity of about 50,000 cps or less.

7. The process of claim 1 wherein the food product has a viscosity of about 50 to 110 cps before ejecting the media and the drop volume is about 120 pL or less.

8. The process of claim 1 wherein the ink jet printer comprises a drop on demand ink jet printer.

9. The process of claim 8 wherein the ink jet printer comprises a piezoelectric ink jet printer.

10. The process of claim 1 comprising heating the media to a temperature of about 40 to 140°C.

11. The process of claim 1 comprising printing at a resolution of 50 dpi or more.

13. The process of claim 1 wherein the media has a viscosity of about 8-20 cps when the media is ejected from the ink jet printer.

14. The process of claim 1 wherein the media has a viscosity of about 70-100 cps at 68 degrees F.

15. The process of claim 1 wherein the media has a water soluble carrier.

16. The process of claim 1 wherein the media comprises predominantly an alcohol or acid, or water or combination thereof.

17. The process of claim 1 wherein the media comprises predominantly a fat or a wax and is a solid at 68 degrees F.

18. The process of claim 1 wherein the media is insoluble in the food product.

19. The process of claim 1 wherein the media includes a visible dye.

20. The process of claim 1 wherein the media includes a flavor additive.

21. The process of claim 1 wherein the food product comprises a dairy product.

22. The process of claim 21 wherein the food product comprises ice cream or yogurt.

23. The process of claim 1 wherein the food product comprises a coffee drink including a dairy product.

24. The process of claim 1 wherein the food product is in a temperature range of about 40 to 120°F while ejecting the media.

25. The process of claim 1 comprising:

serving said food product to a consumer within about 45 minutes of ejecting said media.

26. The process of claim 1 wherein the media on the food product has a lateral image bleed of about 10% or less after 10 minutes.

27. A process, comprising:

ejecting a media onto a surface of a food product from an ink jet printer as a series of drops in a predetermined pattern on the surface, while the food product that bears the surface both (a) is in a stable state such that the predetermined pattern on the surface will be maintained for a period of at least 10 minutes, and (b) has a gravity flowability of 50% or more in 24 hours or less, and

after ejecting the media, reducing diffusion of the jettable media in the food product and reducing the flowability of the food product, the media on the food product having a lateral image bleed of about 10% or less in 30 minutes.

28. The process of claim 27 comprising after ejecting the media, enclosing the food product in a container.

29. The process of claim 28 comprising enclosing the food product in a container prior to reducing diffusion of the jettable media.

37. The process of claim 1 further comprising providing an ink jet printer capable of ejecting the series of fluid drops.

38. The process of claim 1 wherein the fluid drops have a drop volume of about 200 pL or less.

39. The process of claim 27 further comprising providing an ink jet printer capable of ejecting the series of fluid drops.

40. The process of claim 27 wherein the drops have a volume of about 200 pL or less.

41. The process of claim 1, wherein providing the food product in a flowing state includes dispensing the food product from a dispenser into a container.

42. The process of claim 41, further comprising, after dispensing the food product into the container, transporting the container on a conveyor to a printing station.

43. The process of claim 42, wherein, at the printing station, the jettable media is ejected on the surface of the food product.

44. The process of claim 1, further comprising, after ejecting the media, transporting the food product in a container to a packaging station to seal the container.

45. The process of claim 1, further comprising, after ejecting the media, transporting the food product in a container to a post-processing station to reduce diffusion of the jettable media in the food product.

46. The process of claim 45, wherein the post-processing station comprises a freezer.

Appendix B - Evidence relied upon by the examiner

1. Shastry et al., Intl. Pub. No. WO 2004/003089 A1, Edible Inks for Ink-Jet Printing on Edible Substrates, Jan. 8, 2004.

2. Soehnlen et al., U.S. Pat. Pub. No. 2002/0143673 A1, Like Kind Exchange System and Method, Oct. 3, 2002.

3. Pumplocker.com, "Viscosity Chart," http://pumplocker.com/images/lit/WEI1/FLUX-HIGH-VISCOSITY-B0000-VISC-CHART-1.PDF [no date cited].

Related Proceedings Appendix

None